

CURRICULUM VITAE

Name: Bernard Moss

Date and Place of Birth: July 26, 1937, New York City

Citizenship: United States
Married, 1961, three children

Education:

1954 - 1957 New York University, B.A.; magna cum laude with honors in biology
1957 - 1961 New York University School of Medicine, M.D.
1962 - 1966 Massachusetts Institute of Technology, Ph.D. (Biochemistry)

Professional Employment:

1961 - 1962 Intern, Children's Hospital Medical Center, Boston, Massachusetts
1966 - 1970 Investigator, Laboratory of Biology of Viruses, National Institute of Allergy and Infectious Diseases, NIH
1971 - 1984 Head, Macromolecular Biology Section, Laboratory of Biology Viruses, NIAID, NIH
1984 - Present Chief, Laboratory of Viral Diseases, NIAID, NIH

Academic Appointments:

1994 - Present: Adjunct Prof., Graduate Genetics Program, George Washington Univ.
1996 - Present: Adjunct Member, George Washington Univ. Inst. for Biomedical Science
2001 - Present: Adjunct Prof. of Cell Biology and Molecular Genetics, Univ. Maryland

Professional Certification

1962 Diplomate of the National Board of Medical Examiners

Professional Societies:

American Association for the Advancement of Science
American Society for Microbiology
American Society of Biological Chemists
American Society for Virology - President 1994

Elected Honor Society Memberships:

Phi Beta Kappa - 1957
Sigma Xi - 1957
Alpha Omega Alpha - 1961
National Academy of Sciences - 1987
American Academy of Microbiology - 1996
Fellow, American Association for the Advancement of Science - 1998

Honors, Awards, Fellowships:

National Foundation Research Fellowship - 1958
PHS Postdoctoral Fellowship - 1963 - 1966
PHS Commendation Medal - 1979
PHS Meritorious Service Medal - 1984
Science Digest's 100 Most Innovative Scientists of 1985
PHS Distinguished Service Medal - 1986
Solomon A. Berson New York University Medical Alumni Achievement Award - 1987
Dickson Prize for Medical Research - 1988
Invitrogen Eukaryotic Expression Award - 1991
ICN International Prize in Virology - 1994
Sackler Scholar, University of Tel Aviv - 1996
Taylor International Prize in Medicine - 1997
Norman P. Salzman Mentor Award in Virology - 1999 and 2001
Bristol-Myers Squibb Award for Distinguished Achievement in Infectious Disease Research - 2000
Microbiology: A centenary perspective (ASM Press). Reprint of 1975 paper describing the discovery of mRNA cap structure

Named Lectureships:

Foundation for Microbiology Lecturer - 1980 - 1981
Becton-Dickinson Traveling Lecture Award - 1984
Schultz Memorial Lecturer, Stanford University - 1985
Stanhope Bayne-Jones Lecturer, Johns Hopkins University - 1985
Wallace P. Rowe Lecturer, American Association of Laboratory Animal Science - 1986
Morris F. Shaffer Lecturer, Tulane University - 1986
NIH Lecture - 1987
Charles A. Stuart Memorial Lecturer, Brown University - 1987
Wellcome Visiting Professor in Microbiology, American Society of Microbiology-1987
Boyce Thompson Distinguished Lecturer, Cornell University - 1987
Cancer Research Campaign Lecturer, University of Glasgow - 1999
Mager Lecture, Hebrew University - 1989
Krock Lectureship in Viral Immunobiology, Scripps Institute - 1991
Shipley Lecturer, Harvard Medical School - 1993
Arthur Brown Distinguished Lecturer, University of Tennessee - 1994
DNA Virus Division Lecture, ASM - 1995
Honess Memorial Lecture, National Research Council, England - 1996
Fields Lecture, ASV Annual Meeting - 1996
Centennial Lecturer, University of North Carolina - 1996
McGinnis Lecture, Duke University - 1997
Fields Lecture, FASEB Meeting - 1998
Alan Granoff Lecturer - 2002
Bernard Fields Lecturer on Microbial Pathogenesis, Scripps Institute - 2003
Visiting Lamb Professor, Vanderbilt University - 2003
Hilleman Award Lecture, University of Chicago - 2004

Editorial Boards and Advisory Committee Memberships

Section Editor - Virology (1992 -present)

Associate Editor: Virology (1976 - 1992)

Editorial Board -

Journal of Virology (1972 - present)

Antimicrobial Agents and Chemotherapy (1973 -1979)

Intervirology (1974 - 1977)

Journal of Biological Chemistry (1982 - 1987)

AIDS Research and Human Retroviruses (1989 - present)

Current Opinion in Biotechnology (1990 - present)

Proceedings of the National Academy of Sciences (2003 – present)

Editorial Advisory Board -

Advances in Virus Research (1984 - present)

NIH CATALYST (1993 - present)

ASM News (2000 – present)

Committees:

Virology Task Force, NIAID (1976 - 1977)

Molecular Biology Study Section, special member, NIH (1977)

NIH Working Group on Virus Recombinant DNA Guidelines (1978)

WHO Study Group on Orthopoxviruses (1979)

NIH Ectromelia Advisory Committee (1980)

ACS, Nucleic Acid and Protein Synthesis Advisory Committee (1983 - 1986)

WHO, Temporary Advisor (1983; 1985; 1989)

The Foundation for Advanced Education in the Sciences, Board of Directors (1985 - 1991)

NIAID Promotion and Tenure Committee (1985 - 1990; 1995 - 1998)

Chairman, NIH AIDS Scientific Vaccine Development Committee (1986 - 1988)

NIH Recombinant DNA Advisory Committee Working Group on Definitions (1986)

Veterinary Biologics Biotechnology Committee, USDA (1986)

American Society of Biological Chemists, Nominating Committee (1987)

Vaccinia Subcommittee, Interagency Group, National Vaccine Program (1988-present)

Head, WHO Collaborating Center for Research on Viral Vectors for Vaccines
(1988-2001)

NIH AIDS Vaccine Selection Committee (1989 - 1998)

NIAID Task Force on Microbiology and Infectious Diseases (1991)

Task Force on the Intramural Research Program of the National Institutes of Health (1991)

University of Pennsylvania, Graduate Review Committee (1992)

International Committee on Taxonomy of Viruses, Poxvirus Subgroup (1992 -
1995; 1997 - present)

NIH Subcommittee on Cooperative Research and Development Agreement (1992 - 1993)

Search Committee, Director, Office of AIDS Research (1993)

WHO Technical Committee: Analysis of Nucleotide Sequence of Variola Virus
Genome (1993 - 1994)

Member, Panel to Assess the NIH Investment in Research on Gene Therapy (1995)
Chairman, American Society for Virology Nominating Committee (1995 - 1996)
American Academy of Microbiology Colloquim: The Scientific Future of Genetic Immunizations (1996)
OAR Coordinating Committee on AIDS Vaccine Research and Development (1997)
Steering Committee, NIH Vaccine Research Center (1997)
Institute of Medicine Committee on Assessment of Future Scientific Needs for Live Variola Virus (1999)
WHO Advisory Committee on Variola Virus (1999 - present)
Search Committee, Vaccine Research Center (1999-2000)
Search Committee, Director Division of AIDS (2000)
Electorate Nominating Committee for Medical Sciences, AAAS (2000 – 2003), Chairman 2003
Fellowship Recruitment Committee of American Academy of Microbiology (2000-2003)
NIH Graduate Partnerships Program Advisory Committee – 2003 –
Interagency Attenuated Vaccinia Working Group - 2002 –
Natl. Res. Council Comm. on Transforming Biological Information into New Therapies – 2003
National Institute of Medical Research (UK) Directorship Search Advisory Group - 2005

Research Interests:

Biology of poxviruses including virus-host interactions, regulation and expression of viral genes, synthesis and processing of viral mRNA, replication of viral DNA, assembly of virions, and determinants of virus virulence; structure and function of the HIV envelope protein; development of vaccinia virus into an expression vector with application to immune response to virus infections, live recombinant vaccines and gene therapy.

Bibliography

1. Kessler, D., B. Moss, and R.W. Chambers (1960) Synthesis of ribonucleoside-5'-polyphosphates. *Biochim Biophys Acta* **38**:549-51.
2. Moss, B. and V.M. Ingram (1965) The repression and induction by thyroxine of hemoglobin synthesis during amphibian metamorphosis. *Proc Natl Acad Sci USA* **54**:967-74.
3. Moss, B. (1968) Inhibition of HeLa cell protein synthesis by the vaccinia virion. *J Virol* **2**:1028-37.
4. Moss, B. and V.M. Ingram (1968) Hemoglobin synthesis during amphibian metamorphosis. II. Synthesis of adult hemoglobin following thyroxine administration. *J Mol Biol* **32**:493-502.
5. Moss, B. and V.M. Ingram (1968) Hemoglobin synthesis during amphibian metamorphosis. I. Chemical studies on the hemoglobins from the larval and adult stages of *Rana catesbeiana*. *J Mol Biol* **32**:481-92.
6. Moss, B. and N.P. Salzman (1968) Sequential protein synthesis following vaccinia virus infection. *J Virol* **2**:1016-27.
7. Katz, E. and B. Moss (1969) Synthesis of vaccinia viral proteins in cytoplasmic extracts. I. Incorporation of radioactively labeled amino acids into polypeptides. *J Virol* **4**:416-22.
8. Moss, B. and E. Katz (1969) Synthesis of vaccinia viral proteins in cytoplasmic extracts. II. Identification of early and late viral proteins. *J Virol* **4**:596-602.
9. Moss, B., E. Katz, and E.N. Rosenblum (1969) Vaccinia virus directed RNA and protein synthesis in the presence of rifampicin. *Biochem Biophys Res Commun* **36**:858-65.
10. Moss, B., E.N. Rosenblum, E. Katz, and P.M. Grimley (1969) Rifampicin: a specific inhibitor of vaccinia virus assembly. *Nature* **224**:1280-4.
11. Salzman, N.P. and B. Moss, *Analysis of radioactively labeled proteins by immunodiffusion*, in *Fundamental Techniques in Virology*, K. Habel and N.P. Salzman, Editors. 1969, Academic Press, Inc: New York. p. 327-33.
12. Grimley, P.M., E.N. Rosenblum, S.J. Mims, and B. Moss (1970) Interruption by Rifampin of an early stage in vaccinia virus morphogenesis: accumulation of membranes which are precursors of virus envelopes. *J Virol* **6**:519-33.
13. Katz, E., P. Grimley, and B. Moss (1970) Reversal of anti-viral effects of rifampicin. *Nature* **227**:1050-1.
14. Katz, E. and B. Moss (1970) Vaccinia virus structural polypeptide derived from a high-molecular-weight precursor: formation and integration into virus particles. *J Virol* **6**:717-26.
15. Katz, E. and B. Moss (1970) Formation of a vaccinia virus structural polypeptide from a higher molecular weight precursor: inhibition by rifampicin. *Proc Natl Acad Sci USA* **66**:677-84.
16. Moss, B. and R. Filler (1970) Irreversible effects of cycloheximide during the early period of vaccinia virus replication. *J Virol* **5**:99-108.
17. Garon, C.F. and B. Moss (1971) Glycoprotein synthesis in cells infected with vaccinia virus. II. A glycoprotein component of the virion. *Virology* **46**:233-46.
18. Grimley, P.M. and B. Moss (1971) Similar effect of rifampin and other rifamycin derivatives on vaccinia virus morphogenesis. *J Virol* **8**:225-31.
19. Moss, B., E.N. Rosenblum, and C.F. Garon (1971) Glycoprotein synthesis in cells infected with vaccinia virus. I. Non-virion glycoproteins. *Virology* **46**:221-32.
20. Moss, B., E.N. Rosenblum, and P.M. Grimley (1971) Assembly of virus particles during

- mixed infection with wild-type vaccinia and a rifampicin-resistant mutant. *Virology* **45**:135-48.
21. Moss, B., E.N. Rosenblum, and P.M. Grimley (1971) Assembly of vaccinia virus particles from polypeptides made in the presence of rifampicin. *Virology* **45**:123-34.
 22. Moss, B. and E.N. Goldblum, *Antiviral effects of rifampicin and related compounds*, in *International Virology 2*, J.L. Melnick, Editor. 1972: Karger, Basel. p. 291-99.
 23. Moss, B. and E.N. Rosenblum (1972) Hydroxylapatite chromatography of protein-sodium dodecyl sulfate complexes. A new method for the separation of polypeptide subunits. *J Biol Chem* **247**:5194-8.
 24. Moss, B., E.N. Rosenblum, P.M. Grimley, and S.J. Mims (1972) Rifamycins: Modulation of specific anti-poxviral activity by small substitutions on the piperazinyliminomethyl side chain. *Antimicrob Agents and Chemo* **2**:181-85.
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 29. Moss, B. and E.N. Rosenblum (1973) Protein cleavage and poxvirus morphogenesis: tryptic peptide analysis of core precursors accumulated by blocking assembly with rifampicin. *J Mol Biol* **81**:267-9.
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 32. Rosemond, H. and B. Moss (1973) Phosphoprotein component of vaccinia virions. *J Virol* **11**:961-70.
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- Chem **249**:3292-96.
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 52. Ensinger, M.J. and B. Moss (1976) Modification of the 5' terminus of mRNA by an RNA (guanine-7-)-methyltransferase from HeLa cells. *J Biol Chem* **251**:5283-91.
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- nucleotide sequences in HeLa cell mRNA. *Biochemistry* **15**:397-401.
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- polyadenylylated vaccinia virus RNA. *J Virol* **30**:365-74.
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- Amplification and Analysis*. 1981. p. 253-66.
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